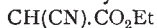


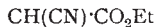
SOCIETIES AND ACADEMIES.

LONDON.

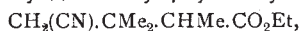
Chemical Society, May 17.—Prof. Thorpe, President, in the chair.—The following papers were read:—The chlorine derivatives of pyridine. VI. The constitution of some aminochloropyridines, by W. J. Sell and F. W. Dootson.—Ortho-substituted nitrogen chlorides and bromides, and the entrance of halogen into the ortho-position in the transformation of nitrogen chlorides, by F. D. Chattaway and K. J. P. Orton. When phenylacetyl nitrogen chloride undergoes transformation, a mixture of 95 to 96 per cent. of para- with 4 to 5 per cent. of ortho-chloroacetanilide is produced.—Ammonium imidosulphite, by E. Divers and M. Ogawa. A crystalline ammonium imidosulphite, $\text{NH}(\text{SO}_2\text{NH}_2)_2$ is obtained on allowing ammonium amidosulphite to decompose below 35° in a current of hydrogen or nitrogen.—The constitution of ethyl sodiocyanacetate and of ethyl methylsodicyanacetate, by J. F. Thorpe. The reactions of ethyl sodiocyanacetate and of ethyl methylsodicyanacetate are best represented by the formulæ $\text{CN}\cdot\text{CH}\cdot\text{C}(\text{ONa})\text{OEt}$ and $\text{CN}\cdot\text{CMe}\cdot\text{C}(\text{ONa})\text{OEt}$ respectively.—The $\alpha\alpha,\beta\beta$ -tetramethylglutaric acids, by J. F. Thorpe and W. J. Young. Ethyl sodiocyanacetate reacts with ethereal iodine solution, yielding ethyl iodocyanacetate, and under certain conditions gives an unstable diiodide which reacts with the excess of ethyl sodiocyanacetate giving ethylic



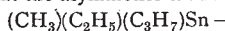
dicyanosuccinate, Ethyl methylsodicyan-



acetate reacts with iodine, forming ethyl methyliodocyanacetate which condenses with ethyl dimethylacrylate, giving the salt $\text{CO}_2\text{H}\cdot\text{CH}(\text{CN})\cdot\text{CMe}_2\cdot\text{CHMe}\cdot\text{CO}_2\text{Et}$; the latter on distillation gives ethyl α -methyl- $\beta\beta$ -dimethyl- γ -cyanobutyrate,



and this when hydrolysed yields $\alpha\beta\beta$ -trimethylglutaric acid. The preparation of *cis*- and *trans*- $\alpha\beta\beta\alpha_1$ -tetramethylglutaric acid is also described.— β -Isopropylglutaric acid and the *cis*- and *trans*-methylisopropylglutaric acids, by F. H. Howles, J. F. Thorpe and W. Udall.—Methyl iodide acts on the sodio-derivative of the product resulting from the condensation of ethyl sodiocyanacetate with ethyl β -isopropylacrylate, yielding ethyl α -cyano- α -methyl- β -isopropylglutarate. The latter on hydrolysis yields ultimately *trans*- α -methyl- β -isopropylglutaric acid and its imide; the imide is converted into the *cis*-acid by heating with sulphuric acid.—The racemisation of optically active tin compounds. Dextromethylethylpropyl tin dextrobromocamphorsulphonate, by W. J. Pope and S. J. Peachey. Optically inactive methylethylpropyl tin iodide is wholly converted into dextromethylethylpropyl tin dextrobromocamphorsulphonate by treatment with the silver salt of the acid and evaporating the filtered solution; the new salt has the molecular rotatory power $[\text{M}]_D = +318^\circ$ in dilute aqueous solution, but after heating and cooling the solution the value $[\text{M}]_D$ falls to $+273^\circ$, which is the value $[\text{M}]_D$ of the acid in aqueous solution. After evaporating the solution to dryness and making up to the original volume by dissolving the residue in cold water, the value $[\text{M}]_D = +315^\circ$ was obtained. It is thus proved that the asymmetric tin radicle



can be easily racemised and easily converted into one optically active component.—Racemic and optically active forms of isoamarine, by H. L. Snape. The author has resolved optically inactive isoamarine into its optically active components by crystallising its tartrate; the dextro-base has the specific rotatory power $[\alpha]_D = +62.02^\circ$. The crystals of the optically active bases are orthorhombic and sphenoidally hemihedral.

Linnean Society, May 3.—Mr. C. B. Clarke, F.R.S., Vice-President, in the chair.—Mr. H. E. Smedley exhibited a number of botanical wax models prepared on an enlarged scale to show the morphological structure and also the process of reproduction in various types of plants.—Mr. J. E. Harting exhibited and made remarks on some skins of willow grouse collected by Prince Demidoff on the N.W. border of Mongolia between Alta Mountains and the Kobdo River.—On behalf of Miss E. S. Barton, the Botanical Secretary read a paper on a new species of *Halimeda* from Funafuti; and on behalf of Miss A. L. Smith, a paper on some West Indian fungi, with descriptions of a new genus and species.

May 24. Anniversary Meeting.—Dr. A. Günther, F.R.S., President, in the chair.—The following were elected into the

Council:—Mr. Clement Reid, Dr. D. H. Scott, Rev. T. R. R. Stebbing, Prof. S. H. Vines, and Mr. A. Smith Woodward; and as President, Prof. Sydney Howard Vines, F.R.S.; Treasurer, Mr. Frank Crisp; Secretaries, Mr. B. Daydon Jackson and Prof. G. B. Howes, F.R.S.—The retiring President then delivered his annual address, choosing for his subject, "The unpublished correspondence of William Swainson with contemporary naturalists (1806-1840)," lately acquired by the Society.—The Gold Medal of the Society was then presented to Prof. Alfred Newton, F.R.S., in recognition of his important contributions to zoological science.

Royal Microscopical Society, May 16.—Mr. Carruthers, F.R.S., President, in the chair.—Mr. Chas. Baker exhibited two microscopes; one made specially for critical work was fitted with eye-pieces of the Society's new Standard gauge, No. 3, of 1.27 in. The other instrument, named the "Plantation" microscope, was designed for use in the tropics for the purpose of discovering the ova of internal parasites. Dr. Hebb said a paper had been received from Mr. Millett, being Part viii. of his report on the Foraminifera of the Malay Archipelago. This, as on former occasions, would be taken as read.—E. M. Nelson read a paper on the lag in microscopic vision, which he illustrated by diagrams and a series of tables showing the proportionate values of the performance of various objectives under eye-pieces of different powers. In the case of an apochromatic objective of fine quality, the degree of merit was shown to range from 14.7 with a low eye-piece, to 7.7 with a deep one, but the difference was more marked with ordinary dry achromatic lenses. Mr. Nelson's experiments had shown that in respect to the lag, microscopes with short tubes had some advantage over those with long tubes. Mr. Nelson also read a paper, for Mr. E. B. Stringer, on a new form of fine adjustment, a microscope by Messrs. Watson and Son, fitted with the arrangement, being exhibited. Mr. Nelson said that its working seemed exceedingly good. As the fine adjustment was placed just behind the body, the limb could be made of any length without putting additional strain upon the screw, a matter which would be of great advantage in microscopes made for examining large sections.—In announcing the adjournment of the meeting until Wednesday, June 20, the president said he hoped then to be able to submit and explain a series of lantern slides representing minute structure of some Palaeozoic plants.

PARIS.

Academy of Sciences, May 28.—M. Maurice Lévy in the chair.—Formation of nitric acid in combustions, by M. Berthelot. When sulphur is burnt in the calorimetric bomb in compressed oxygen under a pressure of twenty-five atmospheres, some nitrogen also being present, nitric acid is formed in quantities amounting to about 0.01 of the sulphur present. At atmospheric pressure the amount of nitric acid formed is much reduced. With metals such as iron and zinc no nitric acid is formed.—Preparation, properties and analysis of thionyl fluoride, by MM. H. Moissan and P. Lebeau (see p. 137).—On the laws of specific heats of fluids, by M. E. H.

Amagat. The formula $\frac{dC}{dp} = -AT\frac{d^2v}{dt^2}$ is applied to find the

relation between the specific heat and pressure of carbon dioxide. The values of $\frac{dv}{dt}$ and $\frac{d^2v}{dt^2}$ were found graphically

from the experimental data, and the results are given in the form of curves.—On some remarkable sub-groups of a group of substitutions or transformations of Lie, by M. Édmond Maillet.—On partial differential equations of the third order which admit of an intermediate integral, by M. A. Guldberg.—Formulæ giving the volumes of saturated vapour and the maximum pressure, by M. H. Moulin. The formulæ deduced from theoretical considerations by the author are compared with the experimental data of Young, Tate and Amagat for benzene, fluorobenzene, carbon tetrachloride, ether, acetic acid, methyl alcohol, water and carbon dioxide with satisfactory results.—The energy absorbed by condensers submitted to a sinusoidal difference of potential, by MM. H. Pellat and F. Beaulard.—The transparency of some liquids for electrostatic oscillations by M. A. de Heen.—On some photochemical effects produced by the wire radiating Hertzian waves, by M. Thomas Tommasina.—On a lithium peroxide, by M. de Forcrand. Since the combustion of lithium in oxygen gives

only traces of a peroxide, attempts were made to prepare lithium peroxide in the wet way, by the action of hydrogen peroxide upon solutions of lithium salts. A thermochemical study of the products showed that some Li_2O_2 is formed in this way.—On the unknown earths contained in crude samaria, by M. Eug. Demarçay. The oxide isolated contains neither samarium nor gadolinium, and is of an atomic weight between these two elements. The chief lines of the spark and absorption spectrum are described.—The reduction of erythrose and the preparation of a new erythrite, *d*-erythrite, by M. Gabriel Bertrand. Ordinary erythrite is easily oxidised by the sorbose bacterium to the ketone erythrose,



and this on treatment with sodium amalgam gives a mixture of two erythrites, one identical with the original inactive erythrite, the other, separated by means of its acetal, is active, possessing a rotatory power $[\alpha]_D = -4^\circ.76$.—Action of cyanogen chloride upon acetone-dicarboxylic ethyl ester, by M. Juvénal Derôme. The cyano-derivative produced,



readily forms metallic salts, the hydrogen adjacent to the cyanogen group being replaced.—On the metallic combinations of diphenylcarbazone, by M. P. Cazeneuve.—Osmotic pressure of the egg and experimental polyembryony, by M. E. Bataillon.—On the sub-fossil Lemuridae of Madagascar, by M. Guillaume Granddidier.—On the discovery of a cave containing animal remains at Bains-Romains, near Algiers, by MM. E. Ficheur and A. Brives. The remains found include the bones of the species *Bubalus*, *Bos*, *Cervus*, *Antilope*, *Hippopotamus*, *Rhinoceros* and *Equus*. The presence of man was indicated by a molar, flint heads, and the presence of calcined bones.—Mode of action of antileucocytic serums upon the coagulation of the blood, by M. C. Delezenne. The mode of action appears to be identical with that of a peptone, the intravenous injection of a leucolytic agent being the same in all cases, the destruction of the white corpuscles circulating in the blood.—On the restoration to life obtained by the rhythmical compression of the heart, by MM. Tuffier and Hallion. A claim for priority against M. Batelli.

DIARY OF SOCIETIES.

THURSDAY, JUNE 7.

LINNEAN SOCIETY, at 8.—On a Viviparous Syllid Worm: E. S. Goodrich.—On the Genera *Phænoneuron*, Gilg., and *Dicellandra*, Hook f.: Dr. A. Itapf.—On the Structure and Affinities of *Echiurus uncinatus*: Miss Embleton.

CHEMICAL SOCIETY, at 8.—Diphenyl- and Dialphyl-ethylenediamines, their Nitro-derivatives, Nitrates, and Mercuriochlorides: W. S. Mills.—Condensation of Ethyl Acetylenedicarboxylate with Bases and β -ketonic Esters: Dr. S. Kuhemann and H. E. Stapleton.—The Constitution of Pilocarpine: Dr. H. A. D. Jowett.—The Nitrogen Chlorides derivable from *m*-Chloroacetanilide and their Transformations: Dr. F. D. Chattaway, Dr. K. J. P. Orton, and W. H. Hurlley.—Derivatives of Cyanocamphor and Homocamphoronic Acid: Dr. A. Lapworth.

RÖNTGEN SOCIETY (St. Bartholomew's Hospital), at 8.—Dr. Lewis Jones will show an Influence Machine of American design.—Mr. James Wimshurst, F.R.S., will give a short statement of his work in the design and the perfecting of the several forms of his Influence Machine.—Dr. Rémy, of Paris, will show a new Localising Apparatus.

FRIDAY, JUNE 8.

ROYAL INSTITUTION, at 9.—The Effect of Physical Agents on Bacterial Life: Dr. Allan Macfadyen.

PHYSICAL SOCIETY, at 5.—On the Magnetic Properties of Iron and Aluminium Alloys, Part II.: Dr. S. W. Richardson.—Note on Crystallisation produced in Solid Metal by Pressure: W. Campbell.—On the Viscosity of Mixtures of Liquids and of Solutions: Dr. C. H. Lees.

ROYAL ASTRONOMICAL SOCIETY, at 8.—Note on a Meteoric Shower South of Corvus: W. F. Denning.—Theory of the Motion of the Moon, Part III. Chapter vi.: Ernest W. Brown.—The Solar Eclipse of 1900 May 28 observed at Stonyhurst: Rev. W. Sidgreaves.—The Solar Eclipse of 1900 May 28 observed at Norwich: G. J. Newbegin.—The Total Solar Eclipse of 1900 May 28 observed at Navalmaral, Spain: Rev. S. J. Johnson.—*Probable Papers*: Description of the Durham Almacantar: R. A. Sampson.—The Cause of the Shadow Bands seen in connection with Total Eclipses of the Sun: G. Johnstone Stoney.

MALACOLOGICAL SOCIETY, at 8.—Note on Two Apparently Undescribed Species of *Bensonina*: W. T. Blanford.—The Non-marine Mollusca of Norfolk Island: E. R. Sykes.—Among the Exhibitions will be Specimens of *Volutilithes abyssicola*, *Ebura papillaris*, and *Bullia annulata* from South Africa, also *Cypraea nigricans*, together with other New Caledonian Cowries: G. B. Sowerby.—Dissections of the Genitalia of *Acarus*: W. B. Randles.

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MONDAY, JUNE 11.

SOCIETY OF CHEMICAL INDUSTRY, at 8.—The Maintenance of Aeration as a Standard of Purity of Sewage Effluents: W. J. Dibbin and G. Thudichum.—The Composition and Determination of Cerium Oxalate: Dr. Frederick B. Power and Frank Shedden.—The Production of Nitrate of Soda in Chili: F. G. Welch.

TUESDAY, JUNE 12.

ANTHROPOLOGICAL INSTITUTE, at 8.30.
ROYAL PHOTOGRAPHIC SOCIETY, at 8.—The Construction of Photographic Objectives: Mathematical Investigation: H. L. Aldis.

THURSDAY, JUNE 14.

ROYAL SOCIETY, at 4.—Election of Fellows.—At 4.30.—*Probable Papers*: Some New Observations on the Static Diffusion of Gases and Liquids, and their Significance in certain Natural Processes occurring in Plants: H. T. Brown, F.R.S., and F. Escombe.—The Electrical Effects of Light upon Green Leaves (Preliminary Communication): Dr. A. D. Waller, F.R.S.—The Exact Histological Localisation of the Visual Area of the Human Cerebral Cortex: Dr. J. S. Bolton.—The Diffusion of Ions produced in Air by the Action of a Radio-active Substance, Ultra-violet Light and Point Discharges: J. S. Townsend.—Data for the Problem of Evolution in Man. V. On the Correlation between Duration of Life and the Number of Offspring: Miss M. Beeton, G. U. Yule, and Prof. K. Pearson, F.R.S.—On an Artificial Retina and a Theory of Vision, Part I.: Prof. J. C. Bose.

MATHEMATICAL SOCIETY, at 5.30.—Some Multiform Solutions of the Partial Differential Equations of Physical Mathematics and their Applications, Part II.: H. S. Carslaw.—Some Quadrature Formulæ: W. F. Sheppard.—Notes on Concomitants of Binary Quantics: Prof. Elliott, F.R.S.—Extensions of the Riemann-Roch Theorem in Plane Geometry: Dr. Macaulay.—On the Invariants of a certain Differential Expression connected with the Theory of Geodesics: J. E. Campbell.—On the Constants which occur in the Differentiation of Theta Functions: Rev. M. M. U. Wilkinson.

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